1st QA Review Sheet

1. What is the difference between a chemical vs physical property/change?

Identify the following:

a. paper tearing

b. freezing/melting/boiling of a substance

c. leaves changing colors in the fall

d. burning wood

2. What is the difference between homogeneous vs heterogenous mixtures?

Identify the following:

a. wood

b. flat soda

c. pizza

d. What is another name for a homogeneous mixture?

3. Particle arrangements

Draw the following:

a. element vs compound

b. mixture of elements vs mixture of compounds vs a mixture of an element and a compound

c. solid vs liquid vs gas of an element

d. solid vs liquid vs gas of a compound

4. The following is a list of some of the lab equipment we have used so far. State what each piece of equipment measures(mass, volume, length etc.) and how it would be used to measure density.

a. electronic balance

b. triple beam balance

c. ruler

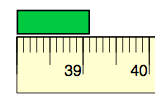
d. graduated cylinder

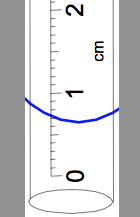
e. overflow can

f. What is the water displacement method and explain when do we use this method in lab and how it helps to determine the density of an object?

5. Measurement

a. Measure the following objects with the correct number of sig figs.



6. Density

a. When you placed an object in water, it sank to the bottom of the graduated cylinder. What can you say about the density value of the object compared to water’s density value?

b. When you placed an object in water, it floats. What can you say about the density value of the object compared to water’s density value?

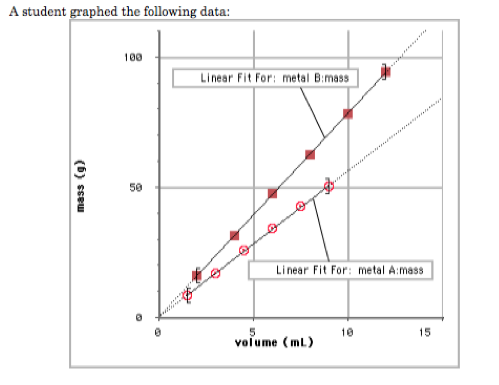
c. What is the formula for density? What units does density have?

d. Suppose object A has a density value of 5 g/ml, and object B has a density of 10 g/ml. Compare mass and volume values of these two objects.

e. Suppose object A has a density value of 5 g/ml.

a. If the mass value increased, then the volume value would increase or decrease in order to keep the density value constant.

b. If the volume value increased, then the mass value would increase or decrease in order to keep the density value constant.



f. Which object is more dense, A or B, and how do you know?

g. What is the volume of objects A and B when it’s mass is 50 grams.

h. Which object has more volume at 50 grams? A or B?

i. What is the mass of object A and B when it’s volume is 10 ml.

j. Which object has more mass at 10 ml? A or B?

k. Find the densities of objects A and B using two points from the graph.

7. Gas Laws

Compare and contrast Boyles, Charles, and Gay-Lussac’s Laws:

a. Graphically. Label the x and y axis with units and draw the line/curve

b. What is the formula for each and state the units for each of the variables.

c. What is the relationship that exists for each law. When \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_goes up/down, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_goes up/down.

d. What does STP stand for? What are the values?

e. If the volume of a gas is 100 ml and its pressure is 1.2 atm, what will the volume be if the pressure is changed to 1.0 atm? Solve and state the law.

f. If the temperature is 25 C and the pressure is 103 kPa, what will be the new temperature if the pressure is changed to 105 kPa? Solve and state the law.

g. If the temperature is 20 C and the volume is 2.5 L, what will be the new volume if the temperature is changed to 80 C?